

## UTILITY PATENT APPLICATION TRANSMITTAL

MAIL STOP PATENT APPLICATION  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450Customer No. 23696  
Attorney Docket No.: 020613  
Date: 10/23/2003  
Express Mail Label No.: EL977102080US

Dear Sir:

Transmitted herewith for filing is the patent application of:

Inventor(s): JOHN W. KETCHUM, MARK S. WALLACE, J. RODNEY WALTON, STEVEN J. HOWARDFor: CHANNEL ESTIMATION AND SPATIAL PROCESSING FOR TDD MIMO SYSTEMS

Enclosed are:

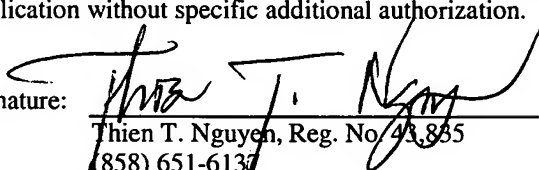
1. ☒ Patent application (43) total pages.
2. ☒ Drawings: ☒ Formal (6) sheet(s) or ☐ Informal ( ) sheet(s).
3. ☒ Declaration/Power of Attorney: ☒ Signed ☐ Unsigned
4. ☒ This application claims priority from Application Serial No. 60/421,428, Filed 10/25/2002, Status PENDING; Application Serial No. 60/421,462, Filed 10/25/2002, Status PENDING; and Application Serial No. 60/421,309, Filed 10/25/2002, Status PENDING.
5. ☒ An Assignment (2) pages and Recordation Form Cover Sheet.
6. ☐ A Preliminary Amendment ( ) pages.
7. ☐ Information Disclosure Statement (IDS):
  - a. ☐ PTO-1449
  - b. ☐ Copies of IDS Citations (number of citations: )
8. ☐ Other:

CLAIMS:	(a) Filed	(b) Extra Claims	Large Entity Fee	Fee Paid
Total*	59 - 20	39	x \$18 =	\$702.00
Independent**	15 - 3	12	x \$86 =	\$1,032.00
Multiple Dependent Claim(s): <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes			\$290	\$0.00
APPLICATION FILING FEE			\$770	\$770.00
			TOTAL FEE	\$2,504.00

\*If the number in column a is less than 20, enter 0 in column b.

\*\*If the number in column b is less than 3, enter 0 in column b.

9. ☐ A check in the amount of \$\_\_\_\_\_ is enclosed to pay the filing fee.
10. ☒ Please charge Deposit Account No. 17-0026 of QUALCOMM Incorporated the amount of \$2,504.00. The Commissioner is hereby authorized to charge payment of any additional fees which may be required, or credit any overpayment, to said Deposit Account No. 17-0026. A duplicate of this sheet is enclosed for fee processing.
11. ☒ The Commissioner is further hereby authorized to charge to said Deposit Account No. 17-0026, pursuant to 37 CFR 1.25(b), any fee whatsoever which may become properly due or payable, as set forth in 37 CFR 1.16 to 37 CFR 1.18 inclusive, for the entire pendency of this application without specific additional authorization.

Date: 10/23/2003Signature: Thien T. Nguyen, Reg. No. 41,855  
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